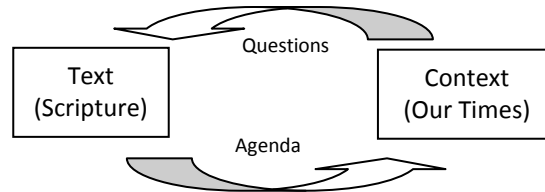


# Biotechnology

## I. Understanding our times



*“There is nothing in Scripture about these things (Islam, stem cell research, xenotransplantation), but Scripture is full of stuff about these things. And we have to take the questions that emerge from our times, and that should drive us back to the text so that we can understand how we ought to live for ‘such a time as this.’”*

*“If Christianity should happen to be true—that is to say, if God is the real God of the universe—then defending it may mean talking about anything and everything. Things can be irrelevant to the proposition that Christianity is false, but nothing can be irrelevant to the proposition that Christianity is true.” ~ G. K. Chesterton*

*“Cloning and the biotech agenda are even worse news for human dignity than abortion. Not only are we taking upon ourselves the godlike prerogative of ending human life as we choose, be we also are attempting to appropriate the prerogative of making human life as we choose.” ~ Charles Colson*

## II. What the biotech age promises

- |  |   |
|--|---|
| A. Creation of life in a lab   | J. Transgenic vegetables that will inoculate the world’s poor against disease |
| B. Predetermination of the sex and genetic makeup of children                      | K. Trees that can grow in a few years instead of decades                      |
| C. Pharmacogenomics (drugs engineered for individuals)                             | L. Plants that can produce substitutes for raw materials in plastic           |
| D. Programming of human genes  | M. Stronger materials, fibers, and adhesives                                  |
| E. Identifying disease genes and genetically deriving cures for cancer, AIDS, etc. | N. Wearable computers   |
| F. Repair of damaged spinal cords and brains                                       | O. Bionics  |
| G. Cloning of mammals, including humans  | P. Bioelectric noses, ears, tongues, etc.                                     |
| H. Control of aging and obesity  | Q. Biosynthetic skin, blood, bones, muscles, etc.                             |
| I. Animals growing replacement organs for humans                                   |   |

## III. What is biotechnology?

- A. Bio = natural and living
- B. Technology = application of technique in an attempt to control, enhance, or manipulate
- C. Biotechnology = Industrial use of living organisms or the application of technique to living organisms

#### IV. Different areas of biotechnology

- A. Stem cell research
  - 1. Cells in your body that have not been diversified and have not stopped reproducing
  - 2. Embryonic stem cells
    - a. The embryo is killed when they are extracted
    - b. No scientific achievement has been made with them
  - 3. Non-embryonic (adult) stem cells
    - a. Human beings are not killed when they are extracted
    - b. Much scientific advancement has been produced with them
- B. Genetics
  - 1. Human genome project
  - 2. Reproductive technology
- C. **Xenotransplantation**: Use of animal tissues, organs, or cells transplanted to or used for contact with human subjects
- D. **Transgenics**: insertion of DNA of one species into the genetic code of another
- E. Robotics
- F. **Nanotechnology**: engineering and manufacturing at the molecular level
  - 1. Medicine
  - 2. National defense
- G. **Artificial Intelligence**: and artificial mechanism that can mimic human thinking
- H. **Cybernetics**: integration of man and machine
- I. **Medical Technology**: antibiotics, medicines, organ transplants, alternative medicines, etc.
- J. **Life Issues**: birth control, abortion, euthanasia, assisted suicide, etc.

#### V. **Bioethics: Right conduct in the area of biotechnology**

*"Bioethics is at least thirty years behind biotechnology."*

#### VI. The challenge of biotechnology

- A. Biotechnology is carried out of control in the context of a **false** worldview
  - "The most dangerous ideas in a society are not the ones that we argue, but the ones that we assume." ~ C. S. Lewis*
  - "A worldview is not just a view of the world; a worldview gives you a view of yourself. And if you have a wrong view of yourself, then there are negative consequences from that."*
- B. We don't know what **human** is
  - "The idols of the nations are silver and gold, made by the hands of men. They have mouths but cannot speak, eyes but they cannot see; they have ears but cannot hear, nor is there breath in their mouths. Those who make them will be like them, and so will all who trust in them." ~ Psalm 135:15-18*
  - 1. We become what we worship
    - a. We worship stuff (e.g. music, celebrities, power, money, self, sex)
    - b. People have become stuff
  - 2. People are seen as only machines
    - "The huge modern heresy is to alter the human soul to fit modern social conditions, instead of altering social conditions to fit the human soul." ~ G. K. Chesterton*
  - 3. Only humans were created to bear God's image
- C. The re-evaluation of humanity
  - 1. We judge the value of stuff by what it can do and what it looks like

2. We judge human beings by what they can do and what they look like

3. What makes humans valuable?

a. Biblical Christianity: Human = **imago Dei**

i. Humans are specially created in the image of God

ii. God has endowed all humans with significant value

iii. All humans have purpose and value

--value is not based on what we can do

--value is not based on what we look like

--value is based on the fact that God has given us his image

b. Naturalism: Human = **body**

i. Humans have no intrinsic value

ii. Some humans have qualities that others do not

iii. We decide which humans have value

*"If we compared the characteristics of different individuals, irrespective of species...we would have to go much further down the evolutionary scale before we reached a point at which non-human animals had capacities as limited as the most severely retarded humans...Pigs, cows, and chickens have a greater capacity to relate to others, better ability to communicate, and far more curiosity than most severely retarded humans."*

*~ Peter Singer, Princeton University*

D. The commodification of humanity

*"Intelligent, Athletic Egg Donor Needed for Loving Family. You must be at least 5'10", have a 1400+ SAT score, Possess no major family medical issues." Fee offered: \$50,000 ~ Advertisement from Harvard Crimson*

E. Are we really in **control**?

1. 276 embryos failed to produce Dolly

2. Dolly was ultimately euthanized

3. Unused embryos are destroyed in human in-vitro fertilization

4. Embryo ownership

5. Mix-ups during in-vitro fertilization

*"Unless human choices control technology, technology will control human choices."*

*~ Andrew Kimbrell, The Humans Body Shop*

F. Not all knowledge is **good** (Genesis 11)

*"According to God, nothing is impossible for collective humanity."*

## VII. How to live in a biotech age

A. Commit to the value of **imago Dei**

*"It is a serious thing...to remember that the dullest and most uninteresting person you talk to may one day be a creature which, if you saw it now, you would be tempted to worship, or else a horror and a corruption such as you now meet, if at all, only in a nightmare. All day long we are, in some degree, helping each other to one or the other of these destinations...There are no ordinary people. You have never talked to a mere mortal. Nations, cultures, arts, civilizations—these are mortal, and their life is to ours as the life of a gnat. But it is immortals whom we joke with, work with, marry, snub, and exploit—immortal horrors or everlasting splendors." ~ C. S. Lewis*

B. Send Christians to the **mission field** of biotechnology

*"What we want is not more little books about Christianity, but more little books by Christians on other subjects—with their Christianity latent. You can see this most easily if you look at it*

*the other way around...it is not the books written in direct defense of Materialism that make modern man a Materialist; it is the materialistic assumptions in all the other books. In the same way, it is not books on Christianity that will really trouble him. But he would be troubled if, whenever he wanted a cheap popular introduction to some science, the best work on the market was always by a Christian.” ~ C. S. Lewis*

- C. Be part of the **informed** public (The public is not educated because they think the media always tells the **truth** and they think people don't have **agendas**)
1. Learn terminology and follow new developments
  2. Offer **hope** (1 Peter 3:15)